

Claims

1. Detection arrangement for observing infrared radiation emitting or reflecting objects, comprising a two-
5 dimensional array of $N \times M$ detector elements $D(i,j)$, $i \leq N$, $j \leq M$, arranged in rows and columns; imaging means, for imaging objects and their environment on the array; image processing means, connected to the array, for periodically generating an image-representing two-dimensional matrix of
10 numbers $S(i,j)$, $i \leq N$, $j \leq M$, and compensation means, for compensating an offset for individual detector elements, characterized in that the compensation means comprise a displacement device, positioned between the imaging means and the array and arranged for displacing the image on the
15 array, and filtering means, incorporated in the image processing means, for generating offset compensating values $C(i,j)$ from at least two images with mutually divergent displacements.
- 20 2. Detection arrangement according to claim 1, characterized in that the displacement device comprises a rotatably positioned plate that is transparent for infrared radiation.
- 25 3. Detection arrangement according to claim 2, characterized in that the plate is rotatably positioned around an optical axis, and that at least a front face or a rear face is mounted non-perpendicular to the optical axis.
- 30 4. Detection arrangement according to claim 2, characterized in that the plate is rotatably positioned around two axes, the axes being positioned such that they are at least substantially perpendicular to an optical axis of the plate and that they are mutually perpendicular.

5. Detection arrangement according to claim 4, characterized in that the axes are positioned at least substantially parallel to the rows and columns of the array.

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6. Detection arrangement according to claim 5, characterized in that actuators are provided, for displacing an image over a distance corresponding with a distance between two detector elements within a row or
10 within a column.

7. Detection arrangement according to claim 6, characterized in that the compensation means are arranged for periodically displacing, with the aid of the plate, an
15 image on (p,q) detector elements, and for subsequently activating the filtering means.

8. Detection arrangement according to claim 7, characterized in that the filtering means are arranged for
20 the iterative generation of offset correcting values $C(i,j)$ for detectors $D(i,j)$ according to an equation $C(i,j)_{\text{new}} = C(i,j)_{\text{old}} + \alpha (S(i-p, j-q) - S(i,j))$, with $0 < \alpha < 1$.

9. Detection arrangement according to claim 8,
25 characterized in that $0.02 < \alpha < 0.2$.

10. Detection arrangement according to claim 8, characterized in that $p \in \{-1, 0, 1\}$ and $q \in \{-1, 0, 1\}$.